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| EXAMINER | |
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| OREILLY, PATRICK F | |

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/537,155 | LEE ET AL. | |
| | Examiner | Art Unit | |
| | Patrick F. O'Reilly III | 3749 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *11 December 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-6,8-23 and 26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *18* is/are allowed.

6)☒ Claim(s) *1-6,8-17,19-23 and 26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *09 April 2007* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *10/10/07*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

1. This action is in response to applicant's Request for Continued Examination (RCE) received on December 11, 2007.

### *Information Disclosure Statement*

2. The information disclosure statement (IDS) submitted on October 10, 2007 is acknowledged. The submission is in compliance with the provisions of 37 C.F.R. § 1.97 and 37 CFR § 1.98 and, therefore, the references therein have been considered.

### *Specification*

3. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: the specification does not provide an antecedent basis for the "heat exchanger" recited in claim 19.

### *Claim Objections*

4. Claim 12 is objected to because of the following informalities: in Applicants' amendment dated April 9, 2007, this claim is said to have been rewritten in independent form, but the limitations of two claims upon which this claim formerly depended, namely claims 7 and 11, have not been included in the amended independent form of this claim. Appropriate correction is required.

### *Claim Rejections - 35 USC § 112*

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 2-4 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Specifically, claim 2 recites the following limitation: "the flow separating means comprises a plurality of conduits for providing the flow introduced from the inlet with flow paths". Moreover, claim 3 further provides that "a number of the inlets is the same as that of the conduits, and each inlet corresponds to each conduit". These claimed limitations appear to be directed to the embodiment of the invention depicted in Figs. 1A-1C because none of the other embodiments in the specification contain more than one conduit or more than one inlet. However, independent claim 1, which is a generic claim that reads on several embodiments set forth in the specification, recites "a flow separating means for separating the fluid flow introduced through the at least one inlet into *at least two fluid flows*" (emphasis added). This particular limitation is not enabled by the embodiment depicted in Figs. 1A-1C. The "flow separating means" in Figs. 1A-1C is the actual collision of the two opposing fluid streams. After these two fluid streams collide, there is a resulting single, swinging fluid stream discharged from the outlet (30). Consequently, there is not a single embodiment in the specification that enables the claimed limitations of independent claim 1 in combination with the claimed limitations of claims 2-4.

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 12 and 19-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

9. Claim 12 recites the limitation "the plate" in lines 18-19 of this claim. There is an insufficient antecedent basis for this limitation in the claim. The "plate" was not referred to previously in this independent claim. For the purpose of an examination on the merits, the examiner has considered "the blunt body" recited in this claim to be in the form of "a plate".

10. As to claim 19, this dependent claim is indefinite because it recites a claimed invention that is entirely different from the claimed invention of base independent claim 1. Specifically, independent claim 1 is directed to a flow spreading mechanism, while the claimed invention in claim 19 is a heat exchanger. A dependent claim must be directed to the same claimed invention as its base independent claim in order for one of ordinary skill in the art to be reasonably apprised of the scope of the invention.

11. As to claim 20, this dependent claim is indefinite because it recites a claimed invention that is entirely different from the claimed invention of base independent claim 1. Specifically, independent claim 1 is directed to a flow spreading mechanism, while the claimed invention in claim 20 is a refrigerator. A dependent claim must be directed to the same claimed invention as its base independent claim in order for one of ordinary skill in the art to be reasonably apprised of the scope of the invention.

12. As to claim 21, this dependent claim is indefinite because it recites a claimed invention that is entirely different from the claimed invention of base independent claim 1. Specifically, independent claim 1 is directed to a flow spreading mechanism, while the claimed invention in

claim 20 is an air conditioner. A dependent claim must be directed to the same claimed invention as its base independent claim in order for one of ordinary skill in the art to be reasonably apprised of the scope of the invention.

### *Claim Rejections - 35 USC § 102*

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

14. **Claims 1, 5-6, 8-10, 12, and 19-21** are rejected under 35 U.S.C. 102(b) as being anticipated by the embodiment of Stouffer (US 4,151,955) depicted in Figure 2. The specification and the drawings in the Stouffer reference disclose all of the elements recited in **claims 1, 5-6, 8-10, 12, and 19-21** of this application.

15. Specifically, in regard to claim 1, which is directed to a flow spreading mechanism, the Stouffer reference discloses all of the claimed elements, including: at least one inlet (inlet passage 11) through which a fluid flow is introduced; a flow separating means (obstacle 14) for separating the fluid flow introduced through the at least one inlet (11) into at least two fluid flows (as shown on both sides of the obstacle 14 in Fig. 2); and an outlet (12) for discharging at least two of the at least two fluid flows to an outside of the flow spreading mechanism (10), said at least two fluid flows being divided by the flow separating means (14) and joined together at a joining point (immediately downstream of the obstacle 14) thereafter, wherein the outlet (12) is located adjacent to the joining point (immediately downstream of the obstacle 14) where the at least two fluid flows are joined together such that the fluid flow being discharged through the

outlet (12) swings (cyclically sweeps back and forth) while proceeding due to complex vortices (shed vortices) caused by the at least two fluid flows being joined together at the joining point (immediately downstream of the obstacle 14) and so the fluid flow being discharged through the outlet (12) is discharged to a wider space (as shown in Figs. 2 and 39) than a width of the outlet (12). Refer to Stouffer, Figures 2 and 39; column 4, lines 39-68; column 5, lines 1-16; and column 6, lines 42-47. Therefore, because all of the elements in claim 1 of this application are disclosed by the embodiment depicted in Figure 2 of the Stouffer reference, this claim is rejected in accordance with 35 U.S.C. 102(b).

16. In regard to claim 5, Stouffer further discloses that the flow separating means (14) comprises: a conduit (13) to form a flow path between the inlet (11) and the outlet (12); and a blunt body (obstacle 14) placed inside the conduit (13) to form two separated flow paths (as shown on both sides of the obstacle 14 in Fig. 2) inside the conduit (13). See Stouffer, Figure 2; column 4, lines 39-68; and column 5, lines 1-16. Thus, Stouffer meets the language of this claim.

17. In regard to claim 6, Stouffer further discloses that the two separated flow paths (on both sides of the obstacle 14 in Fig. 2) are formed extending in a part of the conduit (13). Refer to Stouffer, Figure 2; column 4, lines 39-68; and column 5, lines 1-16. Consequently, the Stouffer reference also meets the language set forth in claim 6.

18. In regard to claim 8, Stouffer further discloses that the blunt body (obstacle 14) is a plate (the obstacle 14 can take the form of a flat plate) which is substantially perpendicular to a direction of the flow path inside the conduit (13). See Stouffer, Figure 2 and column 6, lines 42-47. Therefore, Stouffer also meets the language set forth in this claim.

19. In regard to claim 9, Stouffer further discloses that the blunt body (obstacle 14) is columnar (the obstacle 14 can take the form of an elliptical island, such as that depicted in Fig. 21) with its longitudinal axis substantially perpendicular to a direction of the flow path inside the conduit (13). Refer to Stouffer, Figures 2 and 21; column 6, lines 42-47. Thus, Stouffer meets the language set forth in claim 9.

20. In regard to claim 10, Stouffer further discloses that the ends (15, 16) of the conduit (13) on a side of the outlet (12) are symmetrically bent toward a center of the conduit (13) so that a width of the outlet (12) is smaller than a width of the conduit (13). See Stouffer, Figure 2; column 4, lines 39-68; and column 5, lines 1-16. Consequently, the Stouffer reference also meets the language set forth in this claim.

21. Moreover, in regard to claim 12, which is directed to a flow spreading mechanism, the Stouffer reference discloses all of the claimed elements, including: at least one inlet (inlet passage 11) through which a fluid flow is introduced; a flow separating means (obstacle 14) for separating the fluid flow introduced through the at least one inlet (11) into at least two fluid flows (as shown on both sides of the obstacle 14 in Fig. 2); and an outlet (12) for discharging at least two of the at least two fluid flows to an outside of the flow spreading mechanism (10), the at least two fluid flows being divided by the flow separating means (14) and joined together thereafter (immediately downstream of the obstacle 14), wherein complex vortices (shed vortices) are formed adjacent to the outlet (12) and thus, the fluid flow being discharged through the outlet (12) swings (cyclically sweeps back and forth) while proceeding and so the fluid flow being discharged through the outlet (12) is discharged to a wider space (as shown in Figs. 2 and 39) than a width of the outlet (12), wherein the flow separating means (14) comprises: a conduit

(13) to form a flow path between the inlet (11) and the outlet (12); and a blunt body (obstacle 14) in the form of a plate (the obstacle 14 can take the form of a flat plate) placed inside the conduit (13) to form two separated flow paths (as shown on both sides of the obstacle 14 in Fig. 2) inside the conduit (13), wherein the two separated flow paths (on both sides of the obstacle 14 in Fig. 2) are formed extending in a part of the conduit (13), wherein ends (15, 16) of the conduit (13) on a side of the outlet (12) are symmetrically bent toward a center of the conduit (13) so that a width of the outlet (12) is smaller than a width of the conduit (13), and wherein an interval between the plate (14) and the outlet (12) is set smaller than the width of the outlet (12) such that the flow path from both sides of the plate (14) to the outlet functions as nozzles (ends 15 and 16 form a restriction proximate the downstream side of the obstacle 14 so that the velocity of the flow increases as it passes through the outlet 12). Refer to Stouffer, Figures 2 and 39; column 4, lines 39-68; column 5, lines 1-16; and column 6, lines 42-47. Therefore, because all of the elements in claim 12 of this application are disclosed by the embodiment depicted in Figure 2 of the Stouffer reference, this claim is rejected in accordance with 35 U.S.C. 102(b).

22. As to claims 19-21, the recitations to a "heat exchanger", a "refrigerator", and an "air conditioner" have not been given patentable weight because these recitations occur in the preamble of each claim. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951). In this case, the body of each of these claims merely recites "flow spreading mechanism". Therefore,

because Figure 2 of Stouffer discloses a flow spreading mechanism (10), the Stouffer reference also meets the language set forth in claims 19-21.

23. **Claims 1-4** are rejected under 35 U.S.C. 102(b) as being anticipated by the embodiment of Stouffer (US 4,151,955) depicted in Figure 21. The specification and the drawings in the Stouffer reference disclose all of the elements recited in **claims 1-4** of this application.

24. Specifically, in regard to claim 1, which is directed to a flow spreading mechanism, the Stouffer reference discloses all of the claimed elements, including: at least one inlet (the two flow conduits around elliptical island 144 each have a respective inlet at the bottom end of elliptical island 144) through which a fluid flow is introduced; a flow separating means (triangular island 146) for separating the fluid flow introduced through the at least one inlet (inlets of flow conduits around elliptical island 144) into at least two fluid flows (on both sides on the triangular island 146 in Fig. 21); and an outlet (outlet throat 147) for discharging at least two of the at least two fluid flows to an outside of the flow spreading mechanism, said at least two fluid flows being divided by the flow separating means (146) and joined together at a joining point (immediately downstream of the triangular island 146) thereafter, wherein the outlet (147) is located adjacent to the joining point (immediately downstream of the triangular island 146) where the at least two fluid flows are joined together such that the fluid flow being discharged through the outlet (147) swings (cyclically sweeps back and forth) while proceeding due to complex vortices (shed vortices) caused by the at least two fluid flows being joined together at the joining point (immediately downstream of the triangular island 146) and so the fluid flow being discharged through the outlet (147) is discharged to a wider space (as shown in Figs. 21 and 39) than a width of the outlet (147). Refer to Stouffer, Figures 21 and 39; column 14, lines

28-47. Therefore, because all of the elements in claim 1 of this application are disclosed by the embodiment depicted in Figure 21 of the Stouffer reference, this claim is rejected in accordance with 35 U.S.C. 102(b).

25. In regard to claim 2, Stouffer further discloses that the flow separating means (triangular island 146) comprises a plurality of conduits (two flow conduits around elliptical island 144) for providing the flow introduced from the inlet (inlets of the two flow conduits around elliptical island 144, which are located at the bottom end of elliptical island 144) with flow paths. See Stouffer, Figure 21; column 14, lines 28-47. Thus, Stouffer meets the language of this claim.

26. In regard to claim 3, Stouffer further discloses that a number of the inlets is the same as that of the conduits, and each inlet corresponds to each conduit (the two flow conduits around elliptical island 144 each have a respective inlet at the bottom end of elliptical island 144). Refer to Stouffer, Figure 21; column 14, lines 28-47. Consequently, the Stouffer reference also meets the language set forth in claim 3.

27. In regard to claim 4, Stouffer further discloses that the flow separating (triangular island 146) means comprises two conduits (two flow conduits around elliptical island 144). See Stouffer, Figure 21; column 14, lines 28-47. Therefore, Stouffer also meets the language set forth in this claim.

28. **Claims 22-23 and 26** are rejected under 35 U.S.C. 102(b) as being anticipated by the embodiment of Stouffer (US 4,151,955) depicted in Figure 18. The specification and the drawings in the Stouffer reference disclose all of the elements recited in **claims 22-23 and 26** of this application.

29. Specifically, in regard to claim 22, which is directed to a flow spreading mechanism, the Stouffer reference discloses all of the claimed elements, including: a conduit (bounded by sidewalls 109, 110) having an inlet (107) and an outlet (119); and a blunt body (obstruction 113) placed inside the conduit (bounded by side walls 109, 110) and configured to break an inlet fluid flow coming from the inlet (107) into at least two separate fluid flows (on both sides of the obstruction 113 in Fig. 18) and then join the at least two separate fluid flows at a joining point thereafter (immediately downstream of the obstruction 113) into a discharge fluid flow discharged through the outlet (119), wherein the outlet (119) of the conduit (bounded by side walls 109, 110) is located adjacent to the joining point (immediately downstream of the obstruction 113) where the at least two fluid flows are joined together such that the discharged fluid flow being discharged through the outlet (119) swings (cyclically sweeps back and forth) while proceeding due to complex vortices (shed vortices) caused by the at least two fluid flows being joined together at the joining point (immediately downstream of the obstruction 113), wherein ends of the conduit (bounded by side walls 109, 110) on a side of the outlet (119) are symmetrically bent toward a center of the conduit (bounded by side walls 109, 110) so that a width of the outlet (119) is smaller than a width of the conduit (bounded by side walls 109, 110), wherein a width of the outlet (119) is less than a width of the blunt body (113), wherein a width of the inlet (107) is less than a width of the conduit (bounded by side walls 109, 110) such that an inlet neck portion is formed, and wherein a width of the inlet neck portion (107) at its narrowest cross-section is less than a width of the blunt body (113) and a width of the outlet (119). Refer to Stouffer, Figures 18 and 40; column 12, lines 67-68; and column 13, lines 1-10. In Figure 18, outlet (119) is shown to be only slightly larger than the smallest cross-sectional

portion of the inlet (107). However, Figure 15, which depicts outlet portion (119) in a disengaged position, confirms that the narrowest portion of the inlet (107) has a smaller width than the narrowest portion of outlet (119). See Stouffer, Figures 15. Therefore, because all of the elements in claim 22 of this application are disclosed by the embodiment depicted in Figure 18 of the Stouffer reference, this claim is rejected in accordance with 35 U.S.C. 102(b).

30. In regard to claim 23, Stouffer further discloses that the blunt body (obstruction 113) comprises at least one from: a triangular-shaped body (triangular obstruction 113 – Fig. 18). Refer to Stouffer, Figure 18 and column 12, lines 30-33. Thus, Stouffer meets the language of this claim.

31. In regard to claim 26, Stouffer further discloses that a distance between the blunt body (apex of triangular obstruction 113) and the edges (120, 121) of the outlet (119) is smaller than a width of the outlet (119). See Stouffer, Figure 18. Consequently, the Stouffer reference also meets the language set forth in claim 26.

### *Claim Rejections - 35 USC § 103*

32. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

33. **Claims 11 and 13-15** are rejected under 35 U.S.C. 103(a) as being unpatentable over the embodiment of Stouffer (US 4,151,955) depicted in Figure 2. The specification and the drawings in the Stouffer reference disclose all of the elements recited in **claims 11 and 13-15** of

this application, except for providing the plate with a uniform width (claim 11), which constitutes an obvious matter of design choice, and providing specific dimensional relationships among the plate, inlet, outlet, conduit, and the interval between the plate and the outlet (claims 13-15), which merely constitute the optimization of design parameters.

34. In particular, claim 11 of this application is obvious in light of the embodiment of Stouffer depicted in Figure 2. As described above, Stouffer discloses all the elements of the base claims upon which this claim depends. Moreover, with respect to claim 11, Stouffer further discloses that the blunt body (obstacle 14) is a plate (the obstacle 14 can take the form of a flat plate) which is substantially perpendicular to a direction of the flow path inside the conduit (13). See Stouffer, Figure 2 and column 6, lines 42-47. Stouffer does not disclose expressly that the width of the plate is uniform. Although, at the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to provide the flat plate, as disclosed by Stouffer, with or without a uniform width because the applicant has not disclosed that a plate having a uniform width provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected the applicant's invention to perform equally well with the ordinary flat plate disclosed by Stouffer because a flow separating means in the form of a flat plate is capable of generating an outlet flow that cyclically sweeps back and forth in a transverse direction so as to better disperse the flow into the space. See Stouffer, Figures 2 and 39; column 4, line 68; and column 5, lines 1-2.

35. Moreover, claim 13, is unpatentable over the embodiment of Stouffer depicted in Figure 2. The embodiment of Stouffer depicted in Figure 2 discloses all of the elements of claim 13, except for the plate, outlet, and inlet all having the same width. It has been held that "[w]here

the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation". See MPEP § 2144.05(II)(A) (quoting *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). However, it has further been held that "[a] particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation. Refer to MPEP § 2144.05(II)(B) (quoting *In re Antonie*, 559 F.2d 618, 195 USPQ 6 (CCPA 1977). In regard to claim 13 of this application, the prior art discloses that width of the plate, outlet, and inlet are variable dimensional parameters. Refer to Stouffer, Figures 2-3; column 7, lines 7-60. Moreover, the widths of the plate, outlet, and inlet are all result-effective variables because the prior art teaches that certain specific flow patterns and vortices are able to be formed downstream of the flow separating means (obstacle 14) as a result of varying these three widths. See e.g., Stouffer, Figures 2-3 and 39-40; column 7, lines 7-60. Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to make the plate, outlet, and inlet all the same width because the selection of these particular widths merely constitutes the optimization of design parameters which fails to patentably distinguish claim 13 in this application over the flow spreading mechanism depicted in the Figure 2 embodiment of Stouffer.

36. Claim 14 is unpatentable over the embodiment of Stouffer depicted in Figure 2. The embodiment of Stouffer depicted in Figure 2 teaches all of the elements of claim 14, except for the portion of the conduit, which has a different width than that of the inlet, having a length that is 1 to 1.5 times the width of the inlet and a width that is 2 to 2.5 times the width of the inlet.

The prior art discloses that the length and the width of the aforesaid portion of the conduit are variable, result-effective dimensional parameters because certain specific flow patterns and vortices are able to be formed downstream of the flow separating means (obstacle 14) as a result of varying this particular length and width. Refer to Stouffer, Figures 2-3 and 39-40; column 7, lines 7-60. Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the portion of the conduit, which has a different width than that of the inlet, with a length that is 1 to 1.5 times the width of the inlet and a width that is 2 to 2.5 times the width of the inlet because the selection of this particular length and width merely constitutes the optimization of design parameters which fails to patentably distinguish claim 14 in this application over the flow spreading mechanism depicted in the Figure 2 embodiment of Stouffer.

37. Claim 15 is unpatentable over the embodiment of Stouffer depicted in Figure 2. The embodiment of Stouffer depicted in Figure 2 teaches all of the elements of claim 15, except for the interval between the plate and the outlet being about 0.5 times the width of the outlet. The prior art discloses that the interval between the plate and the outlet is a variable, result-effective dimensional parameter because certain specific flow patterns and vortices are able to be formed downstream of the flow separating means (obstacle 14) as a result of varying this interval. See Stouffer, Figures 2-3 and 39-40; column 7, lines 7-60. Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to make the interval between the plate and the outlet about 0.5 times the width of the outlet because the selection of this particular interval merely constitutes the optimization of a design parameter which fails to

patentably distinguish claim 15 in this application over the flow spreading mechanism depicted in the Figure 2 embodiment of Stouffer.

38. **Claims 1 and 16-17** are rejected under 35 U.S.C. 103(a) as being unpatentable over Rydahl (US 4,304,098) in view of Stouffer (US 4,151,955). These two references, when considered together, teach all of the elements recited in **claims 1 and 16-17** of this application.

39. In particular, claims 1 and 16-17 of this application are obvious when Rydahl is viewed in light of Stouffer. Rydahl discloses the invention substantially as claimed, including: (claim 1) at least one inlet (inlet of channel 34) through which a fluid flow (air flow) is introduced; a flow separating means (specially constructed guide 51) for separating the fluid flow introduced through the at least one inlet (inlet of channel 34) into at least two fluid flows (as shown by arrows 48 while operating the freezer chest in the defrost mode); an outlet (upper opening of channel 34) for discharging at least two of the at least two fluid flows to an outside of the flow spreading mechanism and to a wider space than a width of the outlet (upper opening of channel 34); wherein (claim 16) the outlet (upper opening of channel 34) is installed in a space (space bounded by walls 35-37 and bottom surface 38), and wherein the flow spreading mechanism further comprises at least one sink (guide 28) installed at a predetermined location inside the space (bounded by 35-38), the sink (28) comprising an opening for discharging fluid (49) inside the space to the outside (channel section 46,47); and wherein (claim 17) the number of the at least one sink (guide 28) is even-numbered (two), and each pair of the sinks (guides 28) are installed to face each other in a line traverse to the movement direction of the flow (as shown by arrows 48) discharged through the outlet (upper opening of channel 34). Refer to Rydahl, Figure 2; column 3, lines 53-59; and column 4, lines 6-17.

However, claim 1 of this application further discloses that the at least two fluid flows are divided by the flow separating means and joined together at a joining point thereafter, wherein the outlet is located adjacent to the joining point where the at least two fluid flows are joined together such that the fluid flow being discharged through the outlet swings while proceeding due to complex vortices caused by the at least two fluid flows being joined together at the joining point. Rydahl does not contain these additional limitations.

Stouffer, although, teaches a flow spreading mechanism having at least one inlet (inlet passage 11) through which a fluid flow is introduced; a flow separating means (obstacle 14) for separating the fluid flow introduced through the at least one inlet (11) into at least two fluid flows (as shown on both sides of the obstacle 14 in Fig. 2); and an outlet (12) for discharging at least two of the at least two fluid flows to an outside of the flow spreading mechanism (10), said at least two fluid flows being divided by the flow separating means (14) and joined together at a joining point (immediately downstream of the obstacle 14) thereafter, wherein the outlet (12) is located adjacent to the joining point (immediately downstream of the obstacle 14) where the at least two fluid flows are joined together such that the fluid flow being discharged through the outlet (12) swings (cyclically sweeps back and forth) while proceeding due to complex vortices (shed vortices) caused by the at least two fluid flows being joined together at the joining point (immediately downstream of the obstacle 14) and so the fluid flow being discharged through the outlet (12) is discharged to a wider space (as shown in Figs. 2 and 39) than a width of the outlet (12), for the purpose of effectively dispersing a fluid over a desired target area. Refer to Stouffer, Figures 2 and 39; column 2, lines 6-12; column 4, lines 39-68; column 5, lines 1-16; and column 6, lines 42-47. Therefore, when Rydahl is viewed in light of Stouffer, it would have

been obvious to one having ordinary skill in the art at the time the invention was made to modify the open-type freezer chest of Rydahl by replacing the conventional flow dispersing mechanism (34, 51) with the oscillatory flow dispersal apparatus that produces a swinging outlet flow pattern, as taught by Stouffer, in order to more effectively disperse the cold air (48) over a desired target area so that the freezer chest may be more efficiently defrosted. See Stouffer, Figures 2 and 39; column 2, lines 6-12.

### *Allowable Subject Matter*

40. **Claim 18** is allowed.

### *Response to Arguments*

41. Applicant's arguments with respect to pending claims 1-6, 8-17, 19-23, and 26 have been considered but are moot in view of the new ground(s) of rejection.

With respect to independent claim 22, which now includes the subject matter recited in prior dependent claims 24 and 25, the examiner regretfully informs the applicants that this claim no longer constitutes allowable subject matter in light of the rejection recited above that is based upon a newly discovered prior art reference, namely Stouffer (US 4,151,955).

### *Conclusion*

42. See attached form PTO-892 for additional pertinent prior art, which was not directly relied upon in this action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick F. O'Reilly III whose telephone number is (571) 272-3424. The examiner can normally be reached on Monday through Friday, 8:30 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven B. McAllister can be reached on (571) 272-6785. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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